Retirement village physical activity and nutrition intervention process evaluation

Jancey, Jonine; Holt, Anne-Marie; Lee, Andy; Kerr, Deborah A.; Hart, Ellen ; Robinson, Suzanne

Published in:
Australasian Journal on Ageing

DOI:
10.1111/ajag.12578

Publication date:
2018

Document Version
Peer reviewed version

Retirement village physical activity and nutrition intervention process evaluation informing practice

Aims

This process evaluation aimed to determine participants' perceptions of the strategies utilised in a 6-month intervention that set out to improve physical activity and nutrition in retirement village residents.

Method

Qualitative and quantitative data were collected from intervention participants residing in 17 RVs located in Perth Western Australia via self-report questionnaires (n=139) and semi-structured interviews (n=16).

Results

Intervention resources were moderately useful (55-64%) and suitable (65-68%). Program ambassadors were encouraging (86%) but more face-to-face contact and frequent contact were preferred. The main reason for withdrawing from the program was health-related conditions (aches, pains, injuries).

Conclusions

This study provides evidence that the intervention was reasonably appropriate for older adults residing in RVs. Program ambassadors were well accepted and a successful strategy and should be considered for future interventions in RVs. Increased face-to-face engagement was preferred but this approach will require greater investment. The findings contribute to a small research base concerned with health behaviour interventions in RVs.

Keywords

Healthy aging, independent living, physical exercise, physical fitness

Introduction

Coinciding with Australia's growing ageing population is an increase in the demand for retirement village (RV) living, a relatively new lifestyle concept, in which older adults live in supportive, usually gated communities, whilst maintaining their independence [1]. It is predicted that by 2025, 7.2% of Australians aged over 65 will choose to live in RVs [2].

Currently, most of those choosing to live in RVs are women (66%)[3], who enter the villages in their early-to-late seventies for health and lifestyle reasons[4]. Their perception of this lifestyle choice is one of support for independent living[5], increased social networks, sense of community, security and access to amenities[6]. Whilst many RV's provide physical activity amenities (swimming pool, gym) and physical activity programs (exercise classes), there appears to be a lack of motivation by residents to utilise them [7, 8].

Although specific information on the dietary intake of RV residents is not available, older Australians are recognised as being at high risk of poor or inadequate nutrition. The National Nutrition data found that over half of adults aged over 51 consume the recommended intake of two serves of fruit daily but less than 10% consume the recommended intake of vegetables.[9] The emerging literature increasingly connects fruit and vegetable intake to improved health outcomes and reduced chronic disease[10], making this a priority for ageing populations.

Few physical activity and nutrition interventions have been undertaken in RVs. A physical activity intervention undertaken in US RVs incorporated education resources, bi-weekly phone counselling and group sessions, walking signage, community walking maps, posted

step counts and policy components[11]. This comprehensive intervention adopted a multi-level ecological approach. Preliminary findings reported that compliance rates were high, with 82% attendance at group sessions. Remaining data from this multi-level component evaluation appears not to have been published.

Intervention

The RV Physical Activity and Nutrition for Seniors program was a cluster-randomised controlled trial (RCT) that aimed to improve the physical activity and nutrition of adults aged 60-80 living in RVs [12, 13]. At completion of the 6-month intervention, there were significant increases in participants' moderate-intensity physical activity, strength exercises, consumption of fruit and fibre and fat avoidance, whereas no changes were observed in the control group. Data on group differences have been published elsewhere [14].

The intervention design was underpinned by Social Cognitive Theory (SCT) and informed by Motivational Interviewing (MI) [15-18]. SCT and MI were used to inform the application of an autonomous yet supportive framework to elicit behaviour change [15, 19]. Program resources were designed to improve participant self-efficacy and highlight possible barriers to behaviour change. These resources included an educational booklet, two exercise charts, resistance bands, and a quarterly newsletter. The program booklet was developed by the research team specifically for older adults to improve their nutrition and physical activity levels, adaptable to a wide range of fitness and function levels. Content was guided by the Australian Physical Activity and Nutrition Guidelines for older adults [9, 20]. An activity planner was included in the booklet as an optional tool to assist in planning and setting weekly dietary and physical activity goals. The booklet was referred to during scheduled telephone contacts. The frequency of telephone contact was tailored to suit the needs of the participants.

A key strategy was program ambassadors, who completed a three-hour training workshop, and followed a handbook of current physical activity and nutrition guidelines for older adults and information on the program design and delivery. They were assigned to specific RVs and supported self-efficacy through role modelling of program exercises and the provision of guidance and feedback as participants practiced the exercises. The program ambassadors undertook two face-to-face meetings with the participants, whereby they explained the resources, demonstrated the exercises and discussed the process of goal setting. These meetings were then followed by regular telephone contact. MI was used during telephone contact with goal setting and strategies to overcome barriers to adopting and maintaining health enhancing nutrition and physical activity behaviours [21] .

To assist those external and internal to this progam to understand better the processess of the intervention and how strategies support the outcomes of an intervention, process evaluation was undertaken. Process evaluation can be used to explore the effectiveness of the intervention and each element of the intervention, as well as identify possible limitations of the program [22, 23]. Reasons identified for the latter might include inappropriate program design or incomplete implementation [24]. In addition, reasons for attrition can be explored so that better approaches can be developed to reduce attrition in future programs [25].

This process evaluation aimed to determine participants' perceptions of the strategies utilised and how these strategies supported the outcomes of a 6-month physical activity and nutrition cluster RCT for adults aged 60-80 living in RVs located in Perth, WA.

2.0 Method

This cluster RCT was approved by the Curtin University Human Research Ethics Committee (Approval number: HR 128/2012). All participants were provided with information regarding the objectives of all components of this research and their rights and gave informed consent.

Setting and participants

Retirement village selection

RVs were defined as "gated communities" containing housing built specifically for older adults. Accommodation options included group housing and independent living units, such as villas and apartments [7]. RVs with at least 50 residents aged 60 to 80 and at least 30 independent living units (ILU), located within a 75 kilometre radius of Perth in WA were eligible to participate. Potential RVs were identified via the Seniors Housing Association (WA) and internet search (80 met the selection criteria). Initially the village management and resident committees were sent an email describing the project and its aims. This was followed-up by an onsite information session, and/or a reply paid information postcard placed in residents' letterbox. If residents were interested in being involved in the program, they replied via the post card or directly to the researcher. Thirty-eight villages agreed to participate, and 17 were randomly allocated to the intervention arm.

Retirement village participants

Participants were required to be: aged 60 to 80; insufficiently active (not achieving 150 minutes of moderate-intensity physical activity per week)[26]; on no special diet; and able to

participate in a low-stress program. From the 17 villages, 197 intervention participants were recruited and 139 competed the program (70.5% retention rate).

Process evaluation methods

At completion of the program, qualitative and quantitative information were collected from the participants through self-report questionnaires and semi-structured interviews to inform the process evaluation.

Questionnaires

Two brief questionnaires gathered participants' perceptions of the booklet, exercise charts (readability, comprehension, usefulness of advice, suitability and relevance to age group), the program ambassadors (guidance and support) and preferred level of ongoing telephone contact. The two questionnaires included both closed and open-ended questions. These have been used in a previous program with this age group and found to be appropriate [23].

Resources: booklet and exercise chart

A Likert scale assessed participants' perceptions of the booklet and exercise chart - 'usefulness' (1=very useful to 5= not useful), 'attractiveness' (1= very eye catching/attractive to 5=not eye catching/attractive), 'suitability for age group' (1=suitable for people my age to 5=not suitable for people my age), 'encouragement to be physically active' (1=encouraged me to be physically active to 5=did not encourage me to be physically active), 'encouragement to practise exercises' (1=encouraged me to practise the exercises to 5=did not encourage me to practise the exercises). The open-ended questions explored participants' likes and dislikes of the resources and suggestions for program improvements.

Program Ambassador

Participants' perceptions of the support provided by the program ambassadors were assessed using a Likert scale - 'usefulness of contact' (1=very useful to 5=not useful), 'frequency of contact' (1=often to 5=not often enough), 'sufficiency of guidance' (1=sufficient to 5=insufficient), and 'sufficiency of goal setting' (1=sufficient to 5=insufficient). Open-ended questions asked about the support received and adequacy of the frequency of contacts.

Exit Interviews

Of the 20 participants purposefully approached, 16 agreed to be interviewed via telephone, comprising program completers (n=8) (completed 6-month program) and non-completers (n=8) (did not complete 6-month program). The interview schedule was pilot tested with six members of the target group and changes made accordingly. A trained researcher (AH) conducted the interviews. The semi-structured schedule explored the participants' reasons for becoming involved in the program, their perceptions of the intervention content and resources, as well as their thoughts on the appropriateness of the program and suggestions for improvement. Non-completers provided reasons for their withdrawal from the program. Interviews were 20 minutes long.

Data analysis

Descriptive statistics and bivariate analysis (t-test and chi-square test) were undertaken to compare completers and non-completers characteristics. The Likert scale responses were dichotomised into binary variables (e.g. agree versus disagree; very useful versus not useful) with responses above '3' reported as positive. The data were then summed, and percentages

calculated. Data from the qualitative responses and exit interviews were recorded, transcribed verbatim, and read several times. Coommon key words and phrases were then extracted from the responses by two researchers (AH and EH) independently and themes identified.

Results

Questionnaires

All intervention participants who completed the study were invited to participate (n=139). Characteristics of those who took part at baseline and those lost to attrition (drop-outs) were similar (see Table 1).

Insert Table 1 about here

Participants responding to the surveys were as follows: booklet survey n=92 (66%); exercise chart survey n=89 (64%); and program ambassador survey n=108 (78%). Table 2 summarises participants' responses.

Insert Table 2 about here

Booklet

Fifty-five respondents answered the question 'was there anything you particularly liked about the booklet*?'* stating the reasons, such as *"very informative", "easy to read", "…sound information"*. Participants stated that the booklet could have been improved through "*more*

information on diet because this is my problem area", "an accompanying DVD showing the correct exercise procedure", "making the area in the booklet where you record exercises a little simpler". One participant found the activity planner in the booklet "*difficult to understand"*. Respondents indicated that they "*used it (booklet) for a short while then lost focus", "Didn't like filling in forms", "…forgot and I'm away a lot", "got sick and then got out of practice"* and *"not enough time already, I didn't feel it was necessary"*.

Exercise charts

Respondents indicated what they liked about the exercise chart, such as "*it was a good visual reminder and the exercises were easy to follow", "clear instructions and the use of an older adult model to demonstrate them", "easy to follow and easy to understand", and "good descriptions of the exercises and the photos provided a good explanation"*. Conversely, eight respondents indicated a few practical issues such as *"the small font size', "too many sitting exercises and exercises too easy", "exercises needed to be more challenging"* and *"the exercise section could have been broken into two – more strenuous exercises for those under 70 years and the existing exercises for those 70 years and over"*.

Program Ambassadors

Respondents indicated that the program ambassadors were "*encouraging but not pushy"*, "*offered positive feedback to participants*". They were also accessible, friendly and recognised that people were individuals. They were reported as "*very friendly and respected any limitations we had with the program at the time"*.

Exit Interviews

The program completers (five females; three males) and non-completers (six females; two males) were aged 60 to 80. The identified themes from the exit interviews were recruitment; program resources; program ambassadors; behavioural impact; and attrition.

Recruitment

The majority of the completers (n=5) reported that the information session conducted at the commencement of the program motivated them to become involved; others became aware of the program through the village manager (n=1), the postcard (n=1), or article in the village newsletter (n=1). Half of the completers (n=4) joined the program because the program would motivate them to increase their physical activity level and improve their diet; *"I really wanted to get involved in something like this due to not doing any activity for some time"*, *"…I thought it looked very good, especially as I don't really eat properly"*. Five completers reported that the intervention helped them establish a new regime for regular physical activity and eating better. Three completers commented that they liked the home-based nature of the program. *"Did I increase my exercise-yes definitely"*, *"I guess my diet has improved by being more conscious of it"*, *"the best thing is I'm eating two pieces of fruit a day - I never did before. I'm eating more [vegetables] too"*.

Program resources: booklet and exercise chart

Interviewees stated that the printed resources (booklet, exercise charts, newsletters) were "*very good*" (n=6) and *"easy to read*" (n=3). They found the newsletter content particularly useful (n=3) and thought it was *"a great motivator to keep you on track'*. Despite three completers and three non-completers commenting that they had seen the exercises before, it was not necessarily a negative comment, and completers (n=3) stated that the exercise charts

"helped in keeping me motivated". When asked for suggestions for ways to improve the printed resources, the majority of completers responded that the printed resources were suitable the way they were (n=7); *"[the booklet's] a wonderful resource", "…it was colourful and easy to read"*. Only one non-completer suggested that they would have benefited from the inclusion of more difficult exercises (i.e. higher intensity). Completers (n=2) and non-completers (n=2) felt the overall program could be improved by regular face-to-face trainer-run physical activity sessions: *"I think if it was more supervised/more group things here at the village-it may have got more people"*.

Program ambassadors

The number of telephone calls received from the program ambassador were deemed adequate by completers (n=7). Completers indicated that the program ambassadors are a valuable resource, with comments such as: "*they were useful for keeping me on track", "motivating me",* and *"they were interested in what I was doing"*. Within the short period of time they were exposed to the program, the non-completers also had a positive experience with their program ambassador. Feedback included: *"she was very motivating at the time", "she was very good and very interested in what I was doing"* and *"I think there was more than enough encouragement from him, despite the fact I wasn't the best candidate"*.

Behavioural Impact

Overall, the completers reported that the program assisted them to increase their physical activity levels (n=7) and that the resources supported maintenance of a regular exercise routine (n=6). One completer stated that the program encouraged them to try new activities

Tai Chi, Yoga and Bowen exercises. Two completers reported that their fruit and vegetable intake increased. However, most of the completers (n=7) reflected that their diets were already fairly healthy and they *"knew what to eat", "have always been a good eater"* and *"I eat much the same - lots of fruit and vegetables"*.

Attrition

The non-completers participated for between two and four months, and all agreed that the program was beneficial whilst they were participating, with supportive comments such as, *"It was a good program", "I liked the exercises when I could do them"* and *"In the beginning it motivated me to get back on track, but then I hurt my knee and I've only been able to get walking again"*. Only one non-completer considered herself too fit for the program stating that *"the exercises were too easy"*. The main reason participants did not continue with the program were health-related conditions (n= 7). These included *'back and leg problems'*, *'ankle injury'*, *'knee injury'*, and *'hip problems'*, and one due to a '*family situation'* they had to deal with.

Discussion

Findings suggest that the program was generally appropriate, acceptable and satisfied the majority of participants' requirements. Intervention resources were reported to be attractive, useful, and suitable for supporting improvements in physical activity and nutrition behaviours. However, less than half the participants indicated that the program resources encouraged them to 'sit less' (n= 45.3%), or do exercises (n= 46.6%), which is less than optimal as this formed part of the intervention objectives. This finding does not compare favourably to other programs[23]. In addition, although perceived suitability of the program booklet 'for people my age' was of an acceptable level (65%), the activity planner was poorly

received (43.5%). This is disappointing, for the resources were specifically created for this target group using a systematic process [27], so one might expect a more favourable response.

There was also some criticism of the type of exercises offered, being “too easy” for functional ability of participants, or at times too “challenging”. This clearly indicates the need for a program that is delivered in a flexible and adaptable way, but also in a way that makes participants feel supported and confident to tailor the program to meet their own needs. However, to implement these types of strategies will require greater investment by way of time, personnel and funding, and this is often beyond the scope of many pragmatic interventions. How to make a program attractive to participants and sustainable with limited resources is a challenge.

Program ambassadors worked directly with the target group offering a more personalised tailored approach, which was valued by participants. Participants reported that the program ambassadors were motivating, encouraging them to set goals and do exercise, which is consistent with past research that a peer leader or experienced facilitator is effective in motivating older adults to be more active [28, 29], and reinforces the relevance of personal contact for this age group. The need for more frequent personal contact was also suggested as a way to improve the program, especially during the early stages. This should be considered in future programs, with perhaps a tapering of contact as the program progresses and participant skill levels and self-efficacy increase.

The desire by residents for more personal contact to support the adoption or maintenance of health-enhancing behaviours also has implications for the management of facilities provided

by RVs. The majority of RVs surveyed in a recent facilities audit[7] provided either indoor or outdoor physical activity facilities for their residents. However, reported utilisation of these facilities was low, with only half of the residents surveyed using such facilities on a weekly basis [7]. Access to onsite facilities (e.g. gyms) are only truly valuable if they are used by residents. RVs could be advised to consider implementing a functional processes where residents are supported to use the facilities and maintain health enhancing lifestyle behaviours through the provision of supervisors and /or mentors.

The main reason for withdrawal from the program, as stated by seven of the non-completers during the exit interviews, was related to health conditions. Other programs have also reported similar findings [30]. Upon reviewing the reason for drop-outs, poor health (n=36) and injury (n=23) were the main reasons[13]. Nevertheless, it is encouraging that none of them cited a dislike or unsuitability of the program as the reason for dropping out.

This study used mixed methods design to gather data to understand the appropriateness of strategies, so as to provide greater insights into the acceptability of the intervention. However, not all intervention participants responded to the surveys which may have skewed the findings. This study was restricted to a behavioural approach. A multilevel approach, as used by Kerr [11]and colleagues may support more sustainable outcomes but due to limited funding this was beyond the scope of this study.

Conclusions

This process evaluation provides insight into the effectiveness and preferred elements of a physical activity and nutrition intervention for older adults living in RVs. The role of the program ambassador was found to be an integral intervention strategy, with participants

reporting them to be motivating, supporting them to ‘stay on track’ with the program.. Participants also expressed a desire for more face-to-face contact, indicating a need for a more personal tailored contact, such as that provided by program ambassadors. However this increased personal contact will require increased investment in programs conducted in RVs. The findings from this study contribute to our limited understanding of undertaking physical activity and nutrition interventions in RVs, thereby increasing our capacity to better implement future programs in this setting.

Conflict of interest

The authors declare that they have no conflict of interests.

Acknowledgments

This study was funded by Healthway (Western Australian Health Promotion Foundation), project number 24021. The findings reported are those of the researches. We acknowledge and thank the participants in this study.

References

1. Mehrotra A. The village of the future: babyboomers and retirement living. Perth, WA: Colliers Market Report2010.
2. Swanson H. Retirement Living Australia: Healthcare and Retirement Living2009.
3. Australian Bureau of Statistics. Where and how do Australia's older people live? Canberra: ABS2013.
4. Retirement Village Association, Deloitte. Caring for Older Australians-Submission to the Productivity Commission. Canberra: Retirement Village Association Ltd2010.
5. Crisp p, Windsor T, Anstey K, Butterworth P. What are older adults seeking? Factors encouraging ordiscouraging retirement village living. Australasian Journal of ageing. 2013;32(3):163-70.
6. Bohle P, Rawlings-Way O, Finnn J, Ang J, Kennedy D. Housing Choice in Retirement: Community versus separation. Housing Studies. 2014;29(1):108-27.
7. Holt A, Lee AH, Jancey J, Kerr D, Howat P. Are Retirement Villages Promoting Active Aging? Journal of aging and physical activity. 2016;24(3):407.
8. Marshall S, Bauer J, Capra S. Are informal carers and community care workers effective in managing malnutrtition in the older community? A systematic review of current evidence. Journal of Nutrition Health and Aging. 2013;17:645-51.
9. Brownie S, Muggleston H, Oliver C. The 2013 Australian dietary guidelines and recommendations for older Australians [online]. . Australian Family Physician. 2015;44(5):311-5.
10. Nicklett E, Kadell A. Fruit and vegetable intake among older adults: a scoping review. Maturitas. 2013;75(4):3015-312.
11. Kerr J, Rosenburg D, Nathan A, Millstein R, Carlson J, Crist K, et al. Applying the ecological model of behaviour change to a physical activity trial in retirement communities: description of the study protocol. Contemporary Clinical Trials. 2012;33(6):1180-8.
12. Holt A, Jancey J, Lee A, Kerr D, Hills A, Anderson A, et al. A cluster-randomised controlled trial of a physical activity and nutrtion programme in retirement villages: a study protocol. BMJ Open. 2014;4(e005107).
13. Jancey J, Holt A, Lee A, Kerr D, Robinson S, Tang L, et al. Effects of a cluster-randomised controlled trial of a physical activity and nutrition program in retirement villages. International Journal of Behavioral Nutrition and Physical Activity. 2016;under review.
14. Jancey J, Holt A, Lee A, Kerr D, Robinson S, Tang L, et al. Effects of a cluster-randomised controlled trial of a physical activity and nutrition program in retirement villages. . International Journal of Behavioural Nutrition & Physical Activity 2017;14(92).
15. Cress ME, Buchner DM, Prohaska T, Rimmer J, Brown M, Macera C, et al. Best practices for physical activity programs and behavior counseling in older adult populations. journal of Aging and Physical Activity. 2005;13(1):61-74.
16. Lonsdale C, Hall AM, Williams GC, McDonough SM, Ntoumanis N, Murray A, et al. Communication style and exercise compliance in physiotherapy (CONNECT): a cluster randomized controlled trial to test a theory-based intervention to increase chronic low back pain patients' adherence to physiotherapists' recommendations: study rationale, design, and methods. BMC musculoskeletal disorders. 2012;13:104.
17. Resnicow K, McMaster F. Motivational interviewing: moving from why to how with autonomy support. International Journal of Behavioral Nutrition and Physical Activity. 2012;9(19).
18. Vansteenkiste M, Sheldon K. There's nothing more practical than good theory: integrating motivational interviewing and self-determination theory. British Journal of Clinical Psychology. 2006;45(Pt 1):63-82.
19. Clark PG, Blissmer BJ, Greene GW, Lees FD, Riebe DA, Stamm KE. Maintaining exercise and healthful eating in older adults: The SENIOR project II: Study design and methodology. Contemporary Clinical Trials. 2011;32(1):129-39.

20. National Health and Medical Research Council. Eat for Health. Australian Dietary Guidelines. Canberra: Australian Government2013.
21. Burke L, Jancey J, Howat P, Lee A, Kerr D, Shilton T, et al. Physical activity and nutrition program for seniors (PANS): protocol of a randomized controlled trial. BMC Public Health. 2010;10:751-.
22. Nutbeam D, Bauman AE. Evaluation in a nutshell: A practical guide to the evaluation of health promotion programs. North Ryde, NSW: McGraw Hill; 2006.
23. Blackford K, Jancey, J, Lee, A, J, James, T, Suzanne, Annie Anderson, Andrew Hills, Peter Howat. Process evaluation of the Albany Physical Activity and Nutrition (APAN) program: A home-based intervention to address metabolic syndrome and associated chronic diseases in rural Australian adults. Health Promotion Journal of Australia. 2016;published on line July 14, 2016.
24. Saunders R, Evans M, Joshi P. Developing a process-evaluation plan for assessing health promotion program implementation: A how-to guide. Health Promotion Practice. 2005;6:134-47.
25. Balk EM, Earley A, Raman G, Avendano EA, Pittas AG, Remington PL. Combined diet and physical activity promotion programs to prevent type 2 diabetes among persons at increased risk: A systematic review for the Community Preventive Services Task Force. Annals of Internal Medicine. 2015;1636(6):437.
26. Australian Government. Australia's physical activity and sedentary behaviour guidelines for adults: 18-64 years. Canberra2014.
27. Burke L, Howat P, Lee A, Jancey J, Kerr D, Shilton T. Development of a nutrition and physical activity booklet to engage seniors. BMC Research Notes. 2008;1(77).
28. Dorgo S, Robinson KM, Bader J. The effectiveness of a peer-mentored older adult fitness program on perceived physical, mental, and social function. Journal of the American Academy of Nurse Practitioners. 2009;21(2):116-22.
29. Jancey J, Howat P, Lee A, Shilton T, Fisher J. A physical activity program to mobilize older people: a practical and sustainable approach. Gerontologist. 2008;48(2):251-7.
30. Jancey J, Howat P, Lee A, Clarke A, Shilton T, Fisher J, et al. Effective recruitment and retention of older adults in physical activity research: PALS study. Perth Active Living Seniors Project (PALS). American Journal of Health Behaviour. 2006;30:626-35.